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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,646	03/05/2002	Koji Ozawa	113197-025	9145
24573	7590	03/06/2006	EXAMINER	
BELL, BOYD & LLOYD, LLC			DONG, DALEI	
PO BOX 1135			ART UNIT	
CHICAGO, IL 60690-1135			PAPER NUMBER	
			2879	

DATE MAILED: 03/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/091,646

Applicant(s)

OZAWA ET AL.

Examiner

Dalei Dong

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 3-5 is/are pending in the application.
- 4a) Of the above claim(s) 3 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4 and 5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

#### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 19, 2005 has been entered.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
3. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,428,218 to Müssig in view of U.S. Patent No. 5,570,446 to Zhang.

Regarding to claim 4, Müssig discloses in Figure 1, a method for fusion splicing of an optical fiber using an optical fiber fusion splicer comprising a setting means (first holding device 2 and second holding device 4) for setting respective end surface of two optical fibers (optical conductors 1 and 3) that are to be spliced in order to abut against each other (see column 3, lines 10-25), a heating means (two electrodes 6) for generating

an arc discharge between two discharge electrodes and heating an abutment portion of the optical fibers (optical conductors 1 and 3) using discharge beam (see column 3, lines 61 to column 4, lines 2), and an image pickup means (sensor 8) for picking up an image of the discharge beam (see column 3, lines 26-39), the method comprising: measuring, from image signals obtained by the image pickup means (sensor 8), estimating a heating center of the arc discharge from the plurality of brightness distributions (see column 4, lines 13-46); and thereafter controlling the heating means such that a main arc discharge is generated (see column 3, line 61 to column 4, line 2) and the abutment portion is heated by the discharge beam (see column 3, lines 10-25).

However, Müssig does not disclose a preliminary arc discharge is generated between the discharge electrode when no optical fibers have been placed in a discharge area brightness distribution on a plurality of lines that are set at different positions along a rectilinear direction between the discharge electrodes and run in a direction substantially at right angles to the rectilinear direction; and controlling the setting means such that the abutment portion of the two optical fibers is positioned in the heating center.

The Zhang reference teaches in Figures 1, 2 and 4, a method for fusion splicing an optical fiber, the method comprising: a preliminary arc discharge is generated between the discharge electrodes (5) when no optical fiber have been placed in a discharge area (see column 6, lines 17-39; column 6, lines 53-67) brightness distribution on a plurality of lines that are set at different positions along a rectilinear direction between the discharge electrodes (6) and run in a direction substantially at right angles to the rectilinear direction (see column 5, lines 21-42); estimating a heating center of the arc

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discharge along an axial direction of the optical fiber (see column 6, lines 35-39) from the plurality of the brightness distributions; and controlling the setting means (retainer 41) such that the abutment portion of the two optical fibers (1 and 1') is positioned in the heating center (see column 5, line 62 to column 6, line 16 and column 7, lines 1-23) for the purpose of obtaining a spliced fiber having a large tensile strength and a low attenuation.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize the preliminary arc discharge method of Zhang for the splicing optical fiber of Müssig in order to obtain a spliced fiber having a large tensile strength and a low attenuation.

Regarding to claim 5, Zheng teaches in Figures 1, 2 and 4, the preliminary arc discharge in which the brightness distributions are estimated is performed with the current during the preliminary arc discharge smaller than the current during the main arc discharge in which the abutment portion is heated (see column 6, line 40 to column 7, line 23) and the motivation to combine is the same as above.

#### ***Response to Arguments***

4. Applicant's arguments filed December 19, 2005 have been fully considered but they are not persuasive.

In response to Applicant's argument that the Müssig reference and the Zhang reference fails to teach or suggest estimating a heating center of the arc discharge along an axial direction of the optical fiber and controlling a position of the setting means along the axial direction of the optical fiber, the Examiner respectfully disagree. The Examiner asserts that the Müssig reference clearly teaches in Figures 2a and 2b, reference position x1 and x2 are points along the axial direction of the fiber, and the heating center of the arc discharge is determined relative the reference position x1 and x2. Further, the Zhang reference teaches from the preliminary discharge and utilizing the image processing operation in the unit 19; it is able to adjust the position of the optical fiber. The Zhang reference furthermore teaches fine alignment during the preliminary discharge (see column 6, lines 53-67) and thus the center of the arc discharge is estimated along an axial direction of the optical fiber and the setting means controls the position of the optical fiber along the axial direction. Thus, the Examiner asserts that the prior art of record teaches the claimed invention and maintains the rejection.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalei Dong whose telephone number is (571)272-2370. The examiner can normally be reached on 8 A.M. to 5 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on (571)272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

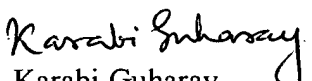
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



D.D.

February 28, 2006

  
Karabi Guharay  
Primary Examiner  
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